

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant(s) : Michael D. Brookshire
Serial Number : 10/671,842
Date of Filing : September 25, 2003
Title : CELEBRATION DIAMOND HAVING
 DOME-SHAPED CROWN WITH PAVILION
Confirmation No. : 9648
Art Unit : 3677
Examiner : Reese, David C.
USPTO Customer No. : 26707
Attorney Docket No. : 121236.00003 CIP

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the non-final Office Action mailed March 31, 2009, Appellant submits the following Appeal Brief under 37 C.F.R. § 41.37. This Appeal Brief is a reinstatement of the Appeal Brief filed on December 10, 2008 and is filed in accordance with the requirements of M.P.E.P. § 1204.01.

I. REAL PARTY IN INTEREST

OMNICE LLP, an Arizona limited liability partnership, having a principal place of business at 6900 East Camelback Road, Suite 950, Scottsdale, Arizona 85251, is the real party in interest of the present application. An assignment of all rights, title, and interest in the present application to OMNICE LLP was executed by Brookshire Diamond Designs, LLC, and recorded by the U.S. Patent and Trademark Office at reel 017789, frame 0235.

II. RELATED APPEALS AND INTERFERENCES

Appellant filed an appeal brief for related application number 10/613,281 ('281 appeal). A decision was issued on April 16, 2009 for Appeal # 2009-0457 affirming the rejections. A copy of the decision is provided in the related proceedings appendix.

There are no interferences and/or decisions rendered by a court related to the present application.

This Appeal Brief is a reinstatement of the Appeal Brief filed on December 10, 2008 and is filed in accordance with the requirements of M.P.E.P. § 1204.01.

III. REASONS FOR REINSTATEMENT OF APPEAL BRIEF

Appellants have elected to reinstate the prior Appeal Brief under M.P.E.P. § 1204.01. For the record, Appellants object to the Office Action of March 31, 2009 that reopens prosecution of the pending patent application. Appellants are entitled to a thorough and complete review of the application and prior art before the issuance of an Office Action. M.P.E.P. § 707.

In the prior Office Action dated December 26, 2007, the Examiner rejected claims 1, 3-5, 7, 8, 10, 13-16, 18, 19, 21, 23-25, and 40-56, under 35 U.S.C. 102(b) and 103(a) in view of the Diagrams for Faceting reference. In response to the Office Action, Appellants filed an Appeal Brief on December 10, 2008.

The March 31, 2009 Office Action reopens prosecution in view of Appellants Appeal Brief of December 10, 2008 and again rejects the claims in view of the Diagrams for Faceting reference making identical rejections. In the Office Action, the Examiner, citing a prior restriction requirement, withdraws several claims that could have been withdrawn in the prior Office Action of December 26, 2007.

By reopening prosecution, Appellants submit the Examiner is failing to comply with M.P.E.P. § 707 and causing inefficiency, delay, and undue cost in the prosecution of the application. In reopening prosecution, the Examiner has not introduced any new rejections.

IV. STATUS OF CLAIMS

The present application contains claims 1-56. Claims 2, 6, 9, 11-12, 17, 20, 22, 26, and 29-39 are cancelled. Claims 46, 50, and 55-56 are withdrawn. Claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, 40-45, 47-49, and 51-54 are rejected. Claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, 27-28, 40-45, 47-49, and 51-54 are on appeal.

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V. STATUS OF AMENDMENTS

None.

VI. SUMMARY OF CLAIMED SUBJECT MATTER

In the present invention, a dome-shaped crown (22) is cut into the diamond rough as a plurality of rows or sets of facets (40). The rows or sets of facets have monotonically decreasing angles to form a generally curved contour from the girdle (26) to the apex of the crown. The dome-shaped crown, especially in the case of a precious gemstone, provides a fluid balance of light return from numerous angles. The dome-shaped crown allows more light to be received and reflected by the gemstone, thus providing greater brilliance and scintillation.

With respect to claim 1, the present invention is a diamond comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found on page 7, lines 7-18 and page 8, line 33 through page 9, line 8 of the specification and FIG. 2. Each of the plurality of facets has a continuous flat surface extending from the girdle to the culet. An edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary, see page 9, lines 9-17. A dome-shaped crown (22) is disposed above the girdle, see page 9, lines 18-25. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, see page 13, lines 6-19. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found on page 9, line 26 through page 13, line 29. Each of the sets of facets has monotonically decreasing surface area from the girdle to the apex

of the dome-shaped crown, see page 13, lines 6-19. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets, as found on page 13, lines 20-29 of the specification.

With respect to claim 13, the present invention is a cut gemstone comprising a pavilion (24) extending from a girdle (26) to a culet (34), as found on page 7, lines 7-18 and page 8, line 33 through page 9, line 8 of the specification and FIG. 2. The girdle extends no further than a widest circumference of the crown. The pavilion extends no further than a widest circumference of the girdle. A crown (22) in the form of a symmetrical hemisphere is formed from at least five sets of facets (40) between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown, see page 9, lines 18-25. The first set of facets is cut at a first angle with respect to a reference line which is tangential to the apex of the crown. The second set of facets is cut at a second angle with respect to the reference line which is less than the first angle. Each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found on page 9, line 26 through page 13, line 29.

With respect to claim 23, the present invention is a cut gemstone comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found on page 7, lines 7-18 and page 8, line 33 through page 9, line 8 of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see page 9, lines 18-25. The girdle extends no further than a widest circumference of the dome-shaped

crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found on page 9, line 26 through page 13, line 29.

With respect to claim 40, the present invention is a cut gemstone comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found on page 7, lines 7-18 and page 8, line 33 through page 9, line 8 of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see page 9, lines 18-25. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets, as found on page 9, line 26 through page 13, line 29.

With respect to claim 47, the present invention is a diamond comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found on page 7, lines 7-18 and page 8, line 33 through page 9, line 8 of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see page 9, lines 18-25. The girdle extends no further than a widest circumference of the dome-shaped

crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, as found on page 9, line 26 through page 13, line 29.

VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, and 40-56 are unpatentable under obvious-type double patenting in view of claim 25-44 of US patent application 10/613,281.

2. Whether claims 40, 44, 47-48, and 54 are anticipated by the Diagrams for Faceting reference under 35 U.S.C. § 102(b).

3. Whether claims 41, 45, 49, and 51 are unpatentable over the Diagrams for Faceting reference under 35 U.S.C. § 103(a).

4. Whether claims 1, 3-5, 13-16, and 23-25 are unpatentable over the Diagrams for Faceting reference under 35 U.S.C. § 103(a).

5. Whether claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 are unpatentable over the Diagrams for Faceting reference under 35 U.S.C. § 103(a).

VIII. ARGUMENT

A. Legal standards

1. 35 U.S.C. § 102(b)

Under 35 U.S.C. 102, "a person shall be entitled to a patent unless (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." Therefore, a claim is anticipated if every element recited in the claim can be found in a single prior publication, patent, or invention, either explicitly or inherently. See *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047 (Fed. Cir. 1995). If the reference fails to suggest, either explicitly or inherently, even one limitation of the claimed invention, then the claim is not anticipated. *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574 (Fed. Cir. 1984). To be anticipatory based on inherency, it must be clear that the missing descriptive matter is present and would be recognized by persons of ordinary skill in the art. *Continental Can Co., U.S.A. v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991).

2. 35 U.S.C. 103(a)

Section 103(a) of Title 35 provides a standard for patentability of the claimed invention. To evaluate patentability under Section 103(a), the scope and content of the prior art are to be determined, differences between the prior art and the claims at issue are to be ascertained, and the level

of ordinary skill in the pertinent art resolved. *Graham v. John Deere Co.* 383 U.S. 1 (1966). In considering the legal standard of obviousness, certain secondary considerations such as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to in order to establish a *prima facie* case of obviousness: (i) the claimed invention must be considered as a whole; (ii) the references must be considered as a whole; (iii) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (iv) there is a reasonable expectation of success. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986); *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In determining obviousness, the Supreme Court in *KSR Intl. Co. v. Teleflex Inc.* advocated a common sense approach. 127 S.Ct. 1727, 1741-43 (2007). Prior art is not limited to the references being applied, but includes the background knowledge of one of ordinary skill in the art. *Id.* at 1742. Where the prior art does not teach or suggest all of the claimed limitations, the invention may still be obvious where the differences between the prior art and the claimed invention would be obvious to one of ordinary skill in the art. *Id.* at 1741.

At the same time, however, a patent is not proven obvious simply because each element is, independently, shown to be in the prior art. *Id.* at 1739. The proper obviousness inquiry is

"whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

B. Double patenting rejection of claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, and 40-56

The Examiner rejects claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, and 40-56 as being unpatentable under obvious-type double patenting in view of claim 25-44 of US patent application 10/613,281.

Appellants note that US patent application 10/613,281 is abandoned, rendering the double patenting rejection of claims 1, 3-5, 7, 8, 10, 13-16, 18-19, 21, 23-25, 27, 28, and 40-56 of the subject application moot.

C. Claims 40, 44, 47-48, and 54 are patentable over Diagrams for Faceting

1. Claims 40 and 44

The Examiner rejects claims 40 and 44 under 35 U.S.C. 102(b) as being anticipated by the Diagrams for Faceting reference. Appellant respectfully traverses the rejection and submits the following arguments in favor of reversal of the rejection and allowance of the claim.

Claim 40 recites a cut gemstone comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets cut with monotonically

decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets.

The dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown is a fundamental distinction between the claimed invention and the prior art of record.

The Diagrams for Faceting reference generally discloses a variety of cuts for gemstones. In particular, the Examiner references the Mogul cut on page 9 of the reference. The Mogul cut has at most four rows of crown facets cut at varying angles from a reference plane tangent to a flat tabletop over the crown.

The Diagrams for Faceting reference does not teach or suggest at least the feature of the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The number of rows of facets must be sufficient to yield the dome-shaped crown. The Mogul cut does not address the concerns of cutting facets in a dome-shaped crown. The facet cuts made in the Mogul design would not aid one skilled in the art in making such cuts. The facet cuts needed to maximize the light penetration and reflection and thereby bring out the desired brilliance and scintillation in a dome shape must be precise. The Diagrams for Faceting reference discloses at most four sets of facets from the girdle to the tabletop of the crown which is

insufficient to create a curved contour in accordance with a dome shape as recited in claim 40.

Moreover, the facets in the Mogul design do not extend to the apex of the crown. The Mogul facets terminate prior to the apex leaving the crown with a flat tabletop. Indeed, the Mogul design from the Diagrams for Faceting reference has a flat tabletop similar to the prior art design shown in FIG. 1 of the Appellant's application. The desired brilliance and scintillation exhibited with the claimed dome shape simply cannot be achieved with a flat tabletop crown, see paragraphs [0005]-[0008] of the Appellant's application.

In contrast, Appellant's invention provides sufficient facets to form a curved contour into a dome shape, see FIG. 5. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. The curved contour is important to the invention in that it yields a fluid balance of light return from numerous angles. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the gemstone, thus providing greater brilliance and scintillation, see paragraph [00036].

In addition, the Diagrams for Faceting reference has no disclosure for the claimed feature that each facet within the sets of facets is polygonal in shape with opposing corners (plural) of the polygon nested between adjacent facets (plural). The opposing corners of the polygon being nested between adjacent facets can be seen in FIG. 5. The Diagrams for Faceting reference has triangular facets and therefore cannot have opposing corners of the polygon. Moreover, the corners

(plural) of the triangular facets are not nested between adjacent facets (plural), e.g., see bottom row of Mogul cut in the Diagrams for Faceting reference. Appellant submits this claimed feature cannot physically be achieved with the triangular facets in the Diagrams for Faceting reference.

Claim 40 is believed to patentably distinguish over the Diagrams for Faceting reference. Claim 44 is believed to be in condition for allowance as it is dependent from an allowable base claim.

2. Claims 47, 48, and 54

The Examiner rejects claims 47, 48, and 54 under 35 U.S.C. 102(b) as being anticipated by the Diagrams for Faceting reference. Appellant respectfully traverses the rejection and submits the following arguments in favor of reversal of the rejection and allowance of the claim.

Claim 47 recites a diamond comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

The dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown is a fundamental distinction between the claimed invention and the prior art of record.

The Diagrams for Faceting reference generally discloses a variety of cuts for gemstones. In particular, the Examiner references the Mogul cut on page 9 of the reference. The Mogul cut has at most four rows of crown facets cut at varying angles from a reference plane tangent to a flat tabletop of the crown.

The Diagrams for Faceting reference does not teach or suggest at least the feature of the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The number of rows of facets must be sufficient to yield the dome-shaped crown. The Mogul cut does not address the concerns of cutting facets in a dome-shaped crown. The facet cuts made in the Mogul design would not aid one skilled in the art in making such cuts. The facet cuts needed to maximize the light penetration and reflection and thereby bring out the desired brilliance and scintillation in a dome shape must be precise. The Diagrams for Faceting reference discloses at most four sets of facets from the girdle to the tabletop of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 47.

Moreover, the facets in the Mogul design do not extend to the apex of the crown. The Mogul facets terminate prior to the apex leaving the crown with a flat tabletop. Indeed, the Mogul design from the Diagrams for Faceting reference has a flat tabletop similar to the prior art design shown in FIG. 1 of the Appellant's application. The desired brilliance and scintillation exhibited with the claimed dome shape simply cannot be achieved with a flat tabletop crown, see paragraphs [0005]-[0008] of the Appellant's application.

In contrast, Appellant's invention provides sufficient facets to form a curved contour into a dome shape, see FIG. 5. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. The curved contour is important to the invention in that it yields a fluid balance of light return from numerous angles. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the diamond, thus providing greater brilliance and scintillation, see paragraph [00036].

Claim 47 is believed to patentably distinguish over the Diagrams for Faceting reference. Claims 48 and 54 are believed to be in condition for allowance as each is dependent from an allowable base claim.

D. Claims 41, 45, and 49-51 are patentable over Diagrams for Faceting under 35 U.S.C. 103(a)

Appellant traverses the rejection of claims 41, 45, and 49-51. As acknowledged by the Examiner, the Diagrams for Faceting reference does not disclose that (1) the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown, as recited in claims 41 and 51; and that the polygon is a hexagon, as recited in claims 45 and 49. The Examiner states that these features are matters of design choice and would be obvious to one of ordinary skill in the art. Appellant disagrees. Each of these dependent claims provide additional features of the dome-shaped crown which allows more light to be received and reflected by the gemstone, thus

providing greater brilliance and scintillation, see paragraph [00036]. Appellant submits that the Examiner is taking judicial notice by failing to produce any prior art reference that shows the obviousness of the features of claims 41, 45, 49 and 51.

More specifically, claim 44 depends from claim 40 and further recites that the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

Appellant generally disagrees with the Examiner that the Diagrams for Faceting reference discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater brilliance and scintillation, see paragraph [00036]. Claim 44 recites at least five sets of facets. The number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape.

Appellant maintains that the Mogul design in the Diagrams for Faceting reference is not dome-shaped with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The Diagrams for Faceting reference discloses at most four sets of facets from the girdle to the tabletop of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 44. The additional sets of facets recited in claim 44, over and above what is shown in the Diagrams for Faceting reference, go toward forming the curved contour in accordance with its dome shape. The larger number of

facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The dome-shape is functional to achieve the fluid balance of light return from numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the gemstone, thus providing greater brilliance and scintillation, see paragraph [00036].

Accordingly, claim 44 is believed to patentably distinguish over the Diagrams for Faceting reference.

In addition, claims 41, 45, and 49-51 are believed to be in condition for allowance as each is dependent from an allowable base claim.

E. Claims 1, 3-5, 13-16, and 23-25 are patentable over Diagrams for Faceting under 35 U.S.C. 103(a)

1. Claims 1 and 3-5

The Examiner rejects claims 1 and 3-5 under 35 U.S.C. 103(a) as being unpatentable over the Diagrams for Faceting reference. Appellant respectfully traverses the rejection and submits the following arguments in favor of reversal of the rejection and allowance of the claim.

Claim 1 recites a diamond comprising a pavilion having a plurality of facets disposed from a girdle to a culet. Each of the plurality of facets has a continuous flat surface extending from the girdle to the culet. An edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary. A dome-shaped crown is disposed above the

girdle. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. Each of the sets of facets has monotonically decreasing surface area from the girdle to the apex of the dome-shaped crown. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the diamond to produce greater brilliance and scintillation, see paragraph [00036]. Claim 1 recites at least five sets of facets (the specification discloses eleven sets of facets), see paragraph [00027]-[00029]. In any case, the number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape. That is, the large number of rows of facets is necessary to yield the dome-shaped crown. In addition, the apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to form the dome shape capable of receiving and reflecting more light.

Appellant maintains that the Mogul design in the Diagrams for Faceting reference is not dome-shaped with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The reference discloses at most four sets of facets from the

girdle to the tabletop of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 1. The additional sets of facets recited in claim 1, over and above what is shown in the Diagrams for Faceting reference, go toward forming the curved contour in accordance with its dome shape. The Diagrams for Faceting reference does not use an apex of a dome-shaped crown that has less surface area than each facet from the sets of facets. The top of the gemstone in the Diagrams for Faceting reference is a flat tabletop with a surface area larger than the adjacent facets. The flat tabletop in the Diagrams for Faceting reference negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape.

The facets in the Mogul design do not extend to the apex of the crown. The Mogul facets terminate prior to the apex leaving the crown with a flat tabletop. Indeed, the Mogul design from the Diagrams for Faceting reference has a flat tabletop similar to the prior art design shown in FIG. 1 of the Appellant's application. The desired brilliance and scintillation exhibited with the claimed dome shape simply cannot be achieved with a flat tabletop crown, see paragraphs [0005]-[0008] of the Appellant's application.

Appellant further believes that the Mogul design in the Diagrams for Faceting reference does not show each facet within the first and second sets of facets as hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. The facets in the Diagrams for Faceting reference are triangular, not hexagonal, and cannot be reasonably viewed as having opposing corners (plural) of the hexagon nested between

adjacent facets (plural). The opposing corners of the hexagon being nested between adjacent facets can be seen in FIG. 5. The Diagrams for Faceting reference has triangular facets and therefore cannot have opposing corners of the hexagon.

Moreover, the corners (plural) of the triangular facets are not nested between adjacent facets (plural), e.g., see bottom row of Mogul cut in the Diagrams for Faceting reference. Appellant submits this claimed feature cannot physically be achieved with the triangular facets in the Diagrams for Faceting reference.

The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to create the dome-shape. The dome-shape is functional to achieve the fluid balance of light return from numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagonal-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the dome-shaped crown that allow more light to be received and reflected by the diamond, thus providing greater brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 1 is believed to be significantly different from the Diagrams for Faceting reference. The Examiner acknowledges that the Diagrams for Faceting reference does not show all features of claim 1. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference(s) that demonstrates how the differences between claim 1 and the cited reference would

be obvious. Claim 1 recites sufficient facets and an apex which has less surface area than each facet from the sets of facets to form a curved contour into a dome shape, see also FIG. 5. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. Claim 1 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. The Diagrams for Faceting reference simply does not have these features.

Accordingly, claim 1 is believed to patentably distinguish over the Diagrams for Faceting reference. Claims 3-5 are believed to be in condition for allowance as each is dependent from an allowable base claim.

2. Claims 13-16

The Examiner rejects claims 13-16 under 35 U.S.C. 103(a) as being unpatentable over the Diagrams for Faceting reference. Appellant respectfully traverses the rejection and submits the following arguments in favor of reversal of the rejection and allowance of the claim.

Claim 13 recites a cut gemstone comprising a pavilion extending from a girdle to a culet. The girdle extends no further than a widest circumference of the crown. The pavilion extends no further than a widest circumference of the girdle. A crown in the form of a symmetrical hemisphere is formed from at least five sets of facets between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown. The first set of facets is cut at a first angle with respect to a reference line which is tangential to the apex of the crown and the second set of facets

is cut at a second angle with respect to the reference line which is less than the first angle. Each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

Appellant disagrees with the Examiner that the Diagrams for Faceting reference discloses a crown in the form of a symmetrical hemisphere formed from at least five sets of facets between the girdle and an apex of the crown. The gemstone shape in the Diagrams for Faceting reference cannot reasonably be viewed as a symmetrical hemisphere, and certainly is not formed from at least five sets of facets between the girdle and an apex of the crown. Moreover, the Diagrams for Faceting reference does not teach or suggest a gemstone wherein each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

A fundamental aspect of the present invention is its crown having the form of a symmetrical hemisphere. The symmetrical hemisphere crown is essential for receiving and reflecting more light by the gemstone to produce greater brilliance and scintillation, see paragraph [00036]. Claim 13 recites at least five sets of facets (the specification discloses eleven sets of facets), see paragraph [00027]-[00029]. In any case, the number of rows of facets must be sufficient to form a symmetrical hemisphere. A symmetrical hemisphere is a substantially rounded surface. The large number of rows of facets is necessary to yield the crown as a symmetrical hemisphere capable of receiving and reflecting more light.

Appellant maintains that the Mogul design in the Diagrams for Faceting reference is not a symmetrical hemisphere. The cited reference discloses at most four sets of facets from the

girdle to the tabletop of the crown which is insufficient to create a symmetrical hemisphere, as recited in claim 13. The additional sets of facets recited in claim 13, over and above what is shown in the Diagrams for Faceting reference, go toward forming the symmetrical hemisphere. The flat tabletop in the Diagrams for Faceting reference negates reading the prior art reference on the claim because it clearly does not form a symmetrical hemisphere.

The facets in the Mogul design do not extend to the apex of the crown. The Mogul facets terminate prior to the apex leaving the crown with a flat tabletop. Indeed, the Mogul design from the Diagrams for Faceting reference has a flat tabletop similar to the prior art design shown in FIG. 1 of the Appellant's application. The desired brilliance and scintillation exhibited with the claimed symmetrical hemisphere simply cannot be achieved with a flat tabletop crown, see paragraphs [0005]-[0008] of the Appellant's application.

Appellant further believes that the Mogul design in the Diagrams for Faceting reference does not show each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. The facets in the cited reference are triangular, not hexagonal, and cannot be reasonably viewed as having opposing corners (plural) of the hexagon nested between adjacent facets (plural). The opposing corners of the hexagon being nested between adjacent facets can be seen in FIG. 5. The Diagrams for Faceting reference has triangular facets and therefore cannot have opposing corners of the hexagon. Moreover, the corners (plural) of the triangular facets are not nested between adjacent facets (plural), e.g., see bottom row of Mogul cut in

the Diagrams for Faceting reference. Appellant submits this claimed feature cannot physically be achieved with the triangular facets in the Diagrams for Faceting reference.

The larger number of facets is essential to formation of the crown as a symmetrical hemisphere. The symmetrical hemisphere is functional to achieve the fluid balance of light return from numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the symmetrical hemisphere crown that allow more light to be received and reflected by the gemstone, thus providing greater brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 13 is believed to be significantly different from the Diagrams for Faceting reference. The Examiner acknowledges that the cited reference does not show all features of claim 13. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 13 and the Diagrams for Faceting reference would be obvious. Claim 13 recites sufficient facets to form a symmetrical hemisphere, see also FIG. 5. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the symmetrical hemisphere, see paragraphs [00027]-[00029]. Claim 13 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. The Diagrams for Faceting reference simply does not have these features.

Accordingly, claim 13 is believed to patentably distinguish over the Diagrams for Faceting reference. Claims 14-16 are believed to be in condition for allowance as each is dependent from an allowable base claim.

3. Claims 23-25

The Examiner rejects claims 23-25 under 35 U.S.C. 103(a) as being unpatentable over the Diagrams for Faceting reference. Appellant respectfully traverses the rejection and submits the following arguments in favor of reversal of the rejection and allowance of the claim.

Claim 23 recites a cut gemstone comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

Appellant generally disagrees with the Examiner that the Diagrams for Faceting reference discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Moreover, the Diagrams for Faceting reference does not teach or suggest a gemstone wherein each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater brilliance and scintillation, see paragraph [00036]. Claim 23 recites at least five sets of facets. In any case, the number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape. The large number of rows of facets is necessary to yield the dome-shaped crown capable of receiving and reflecting more light.

Appellant maintains that the Mogul design in the Diagrams for Faceting reference is not dome-shaped with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The Diagrams for Faceting reference discloses at most four sets of facets from the girdle to the tabletop of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 23. The additional sets of facets recited in claim 23, over and above what is shown in the Diagrams for Faceting reference, go toward forming the curved contour in accordance with its dome shape. The flat tabletop in the cited reference negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape.

Appellant further believes that the Mogul design in the Diagrams for Faceting reference does not show each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. The facets in the Diagrams for Faceting reference are triangular, not hexagonal, and cannot be reasonably viewed as having opposing corners (plural) of the hexagon nested between

adjacent facets (plural). The opposing corners of the hexagon being nested between adjacent facets can be seen in FIG. 5. The Diagrams for Faceting reference has triangular facets and therefore cannot have opposing corners of the hexagon. Moreover, the corners (plural) of the triangular facets are not nested between adjacent facets (plural), e.g., see bottom row of Mogul cut in the Diagrams for Faceting reference. Appellant submits this claimed feature cannot physically be achieved with the triangular facets in the Diagrams for Faceting reference.

The facets in the Mogul design do not extend to the apex of the crown. The Mogul facets terminate prior to the apex leaving the crown with a flat tabletop. Indeed, the Mogul design from the Diagrams for Faceting reference has a flat tabletop similar to the prior art design shown in FIG. 1 of the Appellant's application. The desired brilliance and scintillation exhibited with the claimed dome shape simply cannot be achieved with a flat tabletop crown, see paragraphs [0005]-[0008] of the Appellant's application.

The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The dome-shape is functional to achieve the fluid balance of light return from numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the gemstone, thus providing greater brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 23 is believed to be significantly different than the Diagrams for Faceting reference. The Examiner acknowledges that the Diagrams for Faceting reference does not show all features of claim 23. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 23 and the Diagrams for Faceting reference would be obvious. Claim 23 recites sufficient facets and an apex which has less surface area than each facet from the sets of facets to form a curved contour into a dome shape, see also FIG. 5. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. Claim 23 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. The Diagrams for Faceting reference simply does not have these features.

Accordingly, claim 23 is believed to patentably distinguish over the Diagrams for Faceting reference. Claims 24-25 are believed to be in condition for allowance as each is dependent from an allowable base claim.

F. Claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 are patentable over the Diagrams for Faceting reference

Appellant traverses the rejection of claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53. As acknowledged by the Examiner, the Diagrams for Faceting reference does not disclose the features of claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53. Each of these dependent claims provide additional features of the dome-shaped crown which allows more light to be

received and reflected by the gemstone, thus providing greater brilliance and scintillation, see paragraph [00036]. Appellant submits that the Examiner is taking judicial notice by failing to produce any prior art reference that shows the obviousness of the features of claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53.

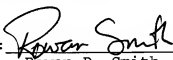
In addition, claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 are believed to be in condition for allowance as each is dependent from an allowable base claim.

G. Conclusion

When properly considered in view of the applicable legal standard, claims 1, 3-5, 7-8, 10, 13-16, 18-19, 21, 23-25, 27-28, 40-45, 47-49, and 51-54 are believed to be patentable in view of the prior art of record. Appellant requests reversal of the final rejection and allowance of the subject patent application.

Respectfully submitted,
QUARLES & BRADY LLP

September 29, 2009

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IX. CLAIMS APPENDIX

1. (Previously presented) A diamond, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet, each of the plurality of facets having a continuous flat surface extending from the girdle to the culet, wherein an edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, each of the sets of facets having monotonically decreasing surface area from the girdle to the apex of the dome-shaped crown, the apex of the dome-shaped crown having less surface area than each facet from the sets of facets.

2. (Cancelled)

3. (Previously presented) The diamond of claim 1, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees.

4. (Original) The diamond of claim 1, wherein the plurality of facets of the pavilion totals at least sixteen in number.

5. (Original) The diamond of claim 1, wherein the pavilion is substantially conical in shape.

6. (Cancelled)

7. (Previously presented) The diamond of claim 1, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

8. (Previously presented) The diamond of claim 7, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

9. (Cancelled)

10. (Previously presented) The diamond of claim 7, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 56 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 46 degrees with respect to the reference line.

11. (Cancelled)

12. (Cancelled)

13. (Previously presented) A cut gemstone, comprising:

a pavilion extending from a girdle to a culet, wherein the girdle extends no further than a widest circumference of the crown and the pavilion extends no further than a widest circumference of the girdle; and

a crown in the form of a symmetrical hemisphere formed from at least five sets of facets between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown, wherein the first set of facets is cut at a first angle with respect to a reference line which is tangential to the apex of the crown and the second set of facets is cut at a second angle with respect to the reference line which is less than the first angle, each facet within the first and second sets of facets being hexagonal in shape with

opposing corners of the hexagon nested between adjacent facets.

14. (Original) The cut gemstone of claim 13, wherein each of the plurality of facets of the pavilion are symmetrically disposed and extend continuous from the girdle to the culet.

15. (Original) The cut gemstone of claim 14 wherein each of the plurality of facets of the pavilion are cut to an angle of about 40.75 degrees with respect to the reference line.

16. (Original) The cut gemstone of claim 13, wherein the plurality of facets of the pavilion totals at least sixteen in number.

17. (Cancelled)

18. (Original) The cut gemstone of claim 13, wherein the first set of facets is disposed in the crown adjacent to the girdle and cut about 90 degrees with respect to the reference line and the second set of facets is disposed in the crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

19. (Previously presented) The cut gemstone of claim 18,
further including:

a third set of facets disposed in the crown adjacent to the
second set of facets and cut about 65 degrees with respect to the
reference line;

a fourth set of facets disposed in the crown adjacent to the
third set of facets and cut about 55 degrees with respect to the
reference line; and

a fifth set of facets disposed in the crown adjacent to the
fourth set of facets and cut about 45 degrees with respect to the
reference line.

20. (Cancelled)

21. (Previously presented) The cut gemstone of claim 13,
further including:

a third set of facets disposed in the crown adjacent to the
second set of facets and cut about 65 degrees with respect to the
reference line;

a fourth set of facets disposed in the crown adjacent to the
third set of facets and cut about 56 degrees with respect to the
reference line; and

a fifth set of facets disposed in the crown adjacent to the fourth set of facets and cut about 46 degrees with respect to the reference line.

22. (Cancelled)

23. (Previously presented) A cut gemstone, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

24. (Original) The cut gemstone of claim 23, wherein each of the plurality of facets of the pavilion are symmetrically disposed and extend continuous from the girdle to the culet.

25. (Original) The cut gemstone of claim 24, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

26. (Cancelled)

27. (Previously presented) The cut gemstone of claim 23, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

28. (Previously presented) The cut gemstone of claim 27, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

29-39. (Cancelled)

40. (Previously presented) A cut gemstone, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being polygonal in shape with opposing corners of the polygon nested between adjacent facets.

41. (Previously presented) The cut gemstone of claim 40, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

42. (Previously presented) The cut gemstone of claim 40, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

43. (Previously presented) The cut gemstone of claim 40, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

44. (Previously presented) The cut gemstone of claim 40, wherein the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

45. (Previously presented) The cut gemstone of claim 40, wherein the polygon is a hexagon.

46. (Withdrawn) The cut gemstone of claim 40, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

47. (Previously presented) A diamond, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed

from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

48. (Previously presented) The diamond of claim 47, wherein each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets.

49. (Previously presented) The diamond of claim 47, wherein the polygon is a hexagon.

50. (Withdrawn) The cut gemstone of claim 47, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

51. (Previously presented) The diamond of claim 47, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

52. (Previously presented) The diamond of claim 47, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

53. (Previously presented) The diamond of claim 51, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

54. (Previously presented) The diamond of claim 47, wherein the dome-shaped crown is formed from at least five sets of facets

with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

55. (Withdrawn) The cut gemstone of claim 13, wherein the apex of the crown has less surface area than each facet from the sets of facets.

56. (Withdrawn) The cut gemstone of claim 23, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

USPTO Application Serial No.: 10/671,842
Appellant: Brookshire, M.
APPEAL BRIEF

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

Appellant filed an appeal brief for related application number 10/613,281. A decision was issued on April 16, 2009 for Appeal # 2009-0457. A copy of the decision follows.

There are no interferences and/or decisions rendered by a court related to the present application.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,281	07/03/2003	Michael David Brookshire	121236.00003	4021

26707 7590 04/16/2009
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EXAMINER

LAVINDER, JACK W

ART UNIT	PAPER NUMBER
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3677

MAIL DATE	DELIVERY MODE
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04/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL DAVID BROOKSHIRE

Appeal 2009-0457
Application 10/613,281
Technology Center 3600

Decided:¹ April 16, 2009

Before LINDA E. HORNER, JOHN C. KERINS, and,
MICHAEL W. O'NEILL, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Michael David Brookshire (Appellant) seeks our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 25-44. Claims 1-24 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

The Appellant's claimed invention is an arrangement of facets on a naturally occurring gemstone designed to enhance brilliance and scintillation. Spec. 1:4-5. Claim 25, reproduced below, is representative of the subject matter on appeal.

25. A naturally occurring precious gemstone, comprising:

a pavilion having a plurality of facets extending from a common point radially to a girdle region around a circumference of the naturally occurring precious gemstone; and

a crown meeting the pavilion in the girdle region, wherein the girdle region extends no further than the widest circumference of the crown and the pavilion extends no further than the widest circumference of the girdle region, the crown being a symmetrical hemisphere formed from a plurality of rows of facets with an equal number of facets in each row, the plurality of rows of facets extending continuously from the girdle region to the top point of the crown of the naturally

occurring precious gemstone, each row of facets being cut with respect to a reference line tangential to the top point of the crown, a first row of facets being cut about 15 degrees, a second row of facets being cut about 19 degrees, a third row of facets being cut about 25 degrees, a fourth row of facets being cut about 30 degrees, a fifth row of facets being cut about 34 degrees, a sixth row of facets being cut about 38 degrees, a seventh row of facets being cut about 46 degrees, an eighth row of facets being cut about 56 degrees, a ninth row of facets being cut about 65 degrees, a tenth row of facets being cut about 75 degrees, and an eleventh row of facets being cut about 90 degrees.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Meyer	US 250,378	Dec. 6, 1881
Schenk (hereinafter "Schenk '938")	US D35,938	Jun. 10, 1902
Schenk (hereinafter "Schenk '724")	US D43,724	Mar. 18, 1913
Vargas, Glenn & Martha, "Diagrams for Faceting," Vol. II, Desert Printing Co. Indio, CA (1983) (hereinafter, "Diagrams for Faceting"). ²		

Appellant seeks our review of the following rejections:

1. The Examiner rejected claims 25-44 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

² While the Answer recites the date of this publication as 1986, the copyright date is 1983, and the second printing was in 1986. This error does not change the status of the reference as prior art.

2. The Examiner rejected claims 25-44 under 35 U.S.C. § 103(a) as unpatentable over “Diagrams for Faceting”, Meyer, Schenk ’938 and Schenk ’724.

ISSUES

The Examiner found the phrase “naturally occurring precious gemstone” is indefinite under 35 U.S.C. § 112, second paragraph, because a gemstone is a stone that has been altered by human hands, and does not naturally occur. Ans. 3.

Appellant contends that the claim is not indefinite because the phrase in question is intended to convey that the gemstone originates from natural sources, and because a person of ordinary skill in the art would understand that the subject matter of the claimed invention is directed to the modification of naturally occurring gemstones into a precious state as recited in the claims. Reply Br. 2-5.

The first issue before us is:

Has Appellant shown that the Examiner erred in determining that the phrase “naturally occurring precious gemstone” renders the claims so indefinite that a person of ordinary skill in the art would not understand what is being claimed?

The Examiner found that claims 25-44 were unpatentable over “Diagrams for Faceting,” Meyer, Schenk ’724, and Schenk ’938. Ans. 4-5. In particular, the Examiner found that “Diagrams for Faceting” discloses faceting designs for use on precious naturally occurring stones including the “Mogul Cut” which has eight rows of crown facets cut at varying angles, but it does not disclose a crown in the shape of a symmetrical hemisphere or

eleven rows of crown facets. *Id.* The Examiner points to Meyer, Schenk '724, and Schenk '938 as examples of patents disclosing a crown in the shape of a symmetrical hemisphere with rows of facets cut at varying angles along the outside of the surface of the hemisphere. *Id.* The Examiner determined that it would have been an obvious design choice to cut eleven rows of crown facets and to make the crown in the shape of a symmetrical hemisphere with pavilion facets as claimed "in order to produce an aesthetically pleasing gemstone." Ans. 4-5.

Appellant contends: 1) Meyer, Schenk '724, and Schenk '938 do not teach or suggest a crown in the form of a symmetrical hemisphere with a plurality of rows of facets with an equal number of facets in each row extending continuously from the girdle to the top point of the crown, and 2) none of the prior art references, taken singularly or in combination, teach or suggest the facet angles recited in the claim. App. Br. 10-13.

The second issue before us is:

Has Appellant shown that the Examiner erred in rejecting claims 25-44 because either 1) Meyer, Schenk '724, and Schenk '938 do not teach or suggest a crown in the form of a symmetrical hemisphere with a plurality of rows of facets with an equal number of facets in each row extending continuously from the girdle to the top point of the crown, or 2) none of the prior art references teach or suggest the facet angles recited in the claim?

FINDINGS OF FACT

We find that the following enumerated facts are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422,

1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Appellant's Specification does not provide a lexicographical definition for a "naturally occurring precious gemstone," nor is a definition provided for any of the terms within that phrase. *Spec. passim*.
2. The Specification consistently refers to the invention as enhancement of a gemstone.
 - a. The "invention relates to methods for cutting gemstones." *Spec. 1:4-5*.
 - b. "The invention relates in general to cut gemstones and methods for producing the same." *Spec. 4:1-2*.
 - c. "The invention generally involves faceted gemstones, and methods for cutting such gemstones." *Spec. 8:1-2*.
 - d. "[T]he aesthetic appeal of a gemstone is often enhanced through polishing and/or cutting." *Spec. 1:9*.
 - e. "Essentially, the gem cutter's craft involves cutting a stone at different angles." *Spec. 1:11-12*.
3. The Specification does not refer to the subject matter of the invention as being a naturally occurring gemstone. *Spec. passim*.
4. The ordinary and customary meaning of the term "gemstone" is "a mineral or petrified material that when cut and polished can be used in jewelry." *Webster's Third New International Dictionary, Unabridged* (1961).

5. Appellant's Specification does not provide a lexicographical definition for a "hemisphere." Spec. *passim*.
6. The ordinary and customary meaning of the term "hemisphere" is "either of two half spheres formed by a plane through a sphere's center." *Webster's Third New International Dictionary, Unabridged* (1961).
7. Meyer discloses an imitation precious stone representing a jewel that is used as an ornament, comprised of a raised or stone part, A, which may be any desired shape, and a surrounding flange, B. Meyer, ll. 4-8, 57-63, 93-99; Figs. 1-6.
8. Meyer discloses an embodiment with a flat bottom and a convex top in the shape of a symmetrical hemisphere with facets arranged in rows from the surrounding flange B to the top of the stone part A. Meyer, ll. 41-43, 63-65; Fig. 5.
9. "Diagrams for Faceting" discloses a variety of faceting designs, including a "Mogul Cut" that has a plurality of facets in rows from the girdle to the table (top point of the crown), with the same number of facets in each row (16 facets in each of rows B, M, M', m, and s). "Diagrams for Faceting," page 9, col. 2, Figure at top right.
10. The problem solved by Appellant was to further enhance brilliance (shine) and scintillation (flash/sparkle) of a gemstone through faceting. Spec. 3:16-20; *see also* definitions of brilliance and scintillation at 2:4-6.
11. Appellant does not recite any unexpected results, nor any quantitative measurement of increased brilliance or

- scintillation. Spec. *passim*; App. Br. *passim*; Reply Br. *passim*.
12. While Appellant describes a preferred angle for each row of facets, Appellant does not describe enhancement of brilliance or scintillation as associated with those particular angles. Spec. *passim*; *see also* description of angles at Spec. 9:5 to 10:9.
13. Appellant does not describe the specified angles of each row of facets in the crown as critical.³ Spec. *passim*; *see also* description of angles at Spec. 9:5 to 10:9.

PRINCIPLES OF LAW

112, second paragraph

The test for definiteness under 35 U.S.C. § 112, second paragraph, is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted).

Appellant's Burden

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

³ The angle of the pavilion is described as critical, but not the angles of rows in the crown. Spec. 5:1.

Attacking references individually

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *See In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413 (CCPA 1981).

Obviousness

“A *prima facie* case of obviousness may be made when the only difference from the prior art is a difference in the range or value of a particular variable. *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990).” *In re Kumar*, 418 F.3d 1361 (Fed. Cir. 2005). “Where the difference between the claimed invention and the prior art is some range or other variable within the claims . . . , the [patentee] must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results.” *In re Woodruff*, 919 F.2d at 1578.

Proof of Unexpected Results

“An applicant cannot prove unexpected results with attorney argument and bare statements without objective evidentiary support.” *CFMT, Inc. v. Yieldup International Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972)); *In re Geisler*, 116 F.3d 1465 (Fed. Cir. 1997) (“attorney argument [is] not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness”); and *In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995) (“It is well settled that unexpected results must be established by factual evidence. Mere argument or conclusory statements . . . [do] not suffice.”) (quoting *In re De Blauwe*, 736 F.2d 699,

705 (Fed. Cir. 1984)). “During prosecution, an applicant may submit objective factual evidence to the PTO in the form of patents, technical literature, and declarations under 37 C.F.R. § 1.132 ... submitting expert testimony and, at times, test data.” *CFMT*, 349 F.3d at 1342.

ANALYSIS

Rejection of claims 25-44 under 35 U.S.C. § 112, second paragraph

The preambles of independent claims 25, 32, and 38 contain the phrase “naturally occurring precious gemstone.”⁴

The claim indicates that the “naturally occurring precious gemstone” is comprised of a pavilion and a crown with a specified number and arrangement of facets. The Specification does not define the phrase “naturally occurring precious gemstone,” or any of the terms within the phrase (Fact 1); however, the Specification consistently refers to the subject matter of the invention as enhancements to a gemstone, and does not refer to the subject matter of the invention as a naturally occurring gemstone (Facts 2-3). The ordinary meaning of “gemstone” is consistent with its usage in the claim, Appellant’s Specification, and Appellant’s argument. In particular, the ordinary meaning of the term “gemstone” is “a mineral or petrified material that when cut and polished can be used in jewelry” (Fact 4), a direct contradiction of the Examiner’s finding that a gemstone cannot occur in nature.

⁴ The phrase is also contained in the body of the claim, but the rejection is only directed to use of the phrase in the preamble. Ans. 3.

A person of ordinary skill in the art, when reading claims 25, 32, and 38 in light of the Specification, would understand that what is claimed is a modification, as specified, of a naturally occurring gemstone into a precious state. As such, claims 25, 32, and 38 are not indefinite, and the Examiner's decision rejecting these claims under the second paragraph of 35 U.S.C. § 112 must be reversed. The Examiner's decision to reject claims 26-31, 33-27, and 39-44 must also be reversed by virtue of their dependence on claims 25, 32, and 38, respectively.

Rejection of claims 25-44 under 35 U.S.C. § 103(a) as unpatentable over "Diagrams for Faceting", Meyer, Schenk '938, and Schenk '724

Claim 25

Appellant argues claims 25-31 as a group. App. Br. 13. As such, we select claim 25 as the representative claim, and claims 26-31 stand or fall with claim 25. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

Appellant makes four arguments against the Examiner's rejection. First, Appellant contends and the Examiner does not contest that "Diagrams for Faceting" does not disclose a crown in the form of a symmetrical hemisphere. App. Br. 12; Ans. 4.

Second, Appellant contends that Schenk '938, Schenk '724, and Meyer also fail to teach or suggest a crown in the form of a symmetrical hemisphere. App. Br. 12-13.

Appellant does not provide a lexicographical definition of "symmetrical hemisphere" (Fact 5). The ordinary and common meaning of the term "hemisphere" is "either of two half spheres formed by a plane through a sphere's center" (Fact 6). Claim 25, taken in context, means that

the shape of the crown must be a symmetrical half sphere. Meyer discloses an imitation precious stone used as an ornament that may be any desired shape, and includes an embodiment with a flat bottom and a convex top portion that is a symmetrical half sphere (Facts 7, 8).

Third, Appellant further argues that Schenk '938, Schenk '724, and Meyer fail to disclose a plurality of rows of facets with an equal number of facets in each row, wherein the plurality of rows of facets extend continuously from the girdle region to a top point of the crown. App. Br. 12-13. The Examiner, however, found this claimed feature in the "Diagrams for Faceting" reference. Ans. 4. We agree that "Diagrams for Faceting" discloses a "Mogul Cut" having a plurality of facets in rows from the girdle to the point of the crown, with the same number of facets in each row (Fact 9). Appellant fails to properly rebut the Examiner's rejection based on the combined teachings of the references, and unconvincingly makes individual attacks on the references.

Fourth, Appellant contends that none of the references teaches or suggests the specific facet angles of the crown recited in the claim. App. Br. 13. The difference between the claim, and the prior art, is the value of a particular variable, namely, the angle of each row of facets. In particular, "Diagrams for Faceting" discloses rows of facets cut at different angles, but it does disclose the specific angles as claimed (Fact 9). Given this, the Examiner has set forth a *prima facie* case of obviousness, and to rebut this showing, Appellant must show that the particular range is critical, generally by showing the claimed range achieves unexpected results. *In re Woodruff*, 919 F.2d at 1578.

Appellant contends that the claimed cuts “provide the necessary light penetration and reflection to maximize the brilliance and scintillation of the gemstone.” App. Br. 13. Appellant’s statement is attorney argument without objective evidentiary support and does not prove unexpected results. *CFMT, Inc. v. Yieldup International Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003). Nor is there adequate evidentiary support in the Specification, which states only that the Appellant sought to enhance brilliance and sparkle and does not recite any unexpected results (Fact 10, 11). Further, Appellant has not tied the enhanced brilliance and scintillation to the angle of the rows of facets in the crown (Fact 12). Additionally, the Specification does not refer to the angles of the rows of facets as critical (Fact 13), and the angles are claimed as approximations without a specified tolerance range (i.e. “about”). Appellant has not proven the angles of the rows of facets in the crown produce unexpected results or are otherwise critical to the invention.

Appellant has failed to demonstrate the Examiner erred in the rejection of claim 25. Claims 26-31 fall with claim 25.

Claim 32

The Appellant argues claims 32-37 as a group. App. Br. 16. As such, we select claim 32 as the representative claim, and claims 33-37 stand or fall with claim 32. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

Independent claim 32 is like claim 25, but does not contain the limitation that the crown is a symmetrical hemisphere.

Appellant argues that none of the references teach or suggest: 1) a crown formed from a plurality of rows of facets with an equal number of facets in each row extending continuously from the girdle region to a top point of the crown, and 2) the specific facet angles recited. App. Br. 15. For

the reasons set forth in the analysis of claim 25, *supra*, Appellant has failed to demonstrate the Examiner erred in the rejection of claim 32. Claims 33-37 fall with claim 32.

Claim 38

The Appellant argues claims 38-44 as a group. App. Br. 18. As such, we select claim 38 as the representative claim, and claims 39-44 stand or fall with claim 38. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

Independent claim 38 is similar to claim 25, and contains the symmetrical hemisphere limitation, but does not recite the specific angle of each row of facets.

As we noted *supra*, it is uncontested that the “Diagrams for Faceting” reference does not teach a symmetrical hemisphere. App. Br. 17; Ans. 4.

Appellant contends that Schenk ‘938, Schenk ‘724, and Meyer do not teach or suggest a crown in the form of a symmetrical hemisphere and do not teach a plurality of rows of facets with an equal number of facets in each row extending continuously from the girdle region to a top portion of the crown. App. Br. 18. For the same reasons as presented in the analysis of claim 25 *supra*, Appellant has not demonstrated the Examiner erred. Claims 39-44 fall with claim 38.

CONCLUSION

Appellant has shown that the Examiner erred in rejecting claims 25-44 because the phrase “naturally occurring precious gemstone” is not indefinite, as a person of ordinary skill in the art would understand what is being claimed in light of the Specification.

Appellant has failed to show that the Examiner erred in rejecting claims 25-44 because Meyer teaches a crown in the form of a symmetrical

hemisphere, and because Appellant has not proven the angles of the rows of facets in the crown produce unexpected results or are otherwise critical to the invention.

DECISION

We reverse the Examiner's decision to reject claims 25-44 as indefinite under 35 U.S.C. § 112, second paragraph. We affirm the Examiner's decision to reject claims 25-44 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

vsh

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